

Applicant : Short, et al.  
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Filed : November 30, 2001  
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Attorney's Docket No.: 09010-910001

## REMARKS

### Status of the Claims

#### *Pending claims*

Claims 1 to 131 are pending (claims 113 to 131 were added in a preliminary amendment).

#### *Claims canceled, added and amended in the instant amendment*

Claims 132 to 192 are added and claims 1 to 30, 38 to 40, 43 to 113, and 116 to 131, are canceled, without prejudice. Thus, after entry of the instant amendment, claims 33 to 37, 114, 115 and 132 to 192 will be pending and under consideration.

### Support for the Claim Amendments

The specification sets forth an extensive description of the invention in the new and amended claims. Support for claims directed to methods wherein the polymer is formed by self-assembly of monomers with or without a template molecule can be found, inter alia, on page 14, lines 9 to 10. Support for claims directed to methods wherein the polymer is formed by a chain polymerization reaction or a step polymerization reaction can be found, inter alia, on page 14, lines 10 to 11. Support for claims directed to methods wherein the polypeptides have a molecular weight of more than 5,000, or, 10,000 daltons, can be found, inter alia, on page 14, lines 12 to 14. Support for claims directed to methods wherein the polypeptides polymerize into a tubule or a micelle, can be found, inter alia, on page 14, lines 1 to 5, and page 107, lines 29 and 30. Support for claims directed to methods wherein the polypeptides polymerize in the presence of various template molecules, which are described, inter alia, on page 99, line 16, to page 100, line 2. Support for claims directed to methods wherein the monomeric polypeptides or polymers interact with each other, thereby generating paired polymers, bundled polymers, entangled polymers, cross-linked polymers or an interconnected network of polymers, can be found, inter alia, on page 100, lines 14 to 21. Support for claims directed to methods further comprising providing a drug molecule and adding the drug molecule to the polymerization step, thereby generating a drug molecule encapsulated by the polymers, can be found, inter alia, on page 100, line 22 to page 101, line 11. Support for claims directed to methods further comprising using lipids or lipid molecules during the encapsulation process can be found, inter alia, on page 101,

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lines 12 to 24. Support for claims directed to methods further comprising attaching the polymer to a hydrogel, e.g., a three-dimensional structural network for a biochip, can be found, inter alia, on page 103, line 8 to page 107, line 28. Support for claims directed to methods using nucleic acids and polypeptides of various sequence identities and sizes as compared to exemplary sequences can be found, inter alia, on page 11, lines 1 to 20, and on page 97, line 11 to page 98, line 2. Support for claims directed to methods using nucleic acids that hybridize under various conditions to exemplary sequences can be found, inter alia, on page 96, lines 1 to 17. Support for claims directed to methods using polypeptides that have conservative amino acid substitutions of exemplary sequences can be found, inter alia, on page 11, lines 21 to 30

#### The Group Restriction Requirement

The Patent Office alleged that the pending claims of the application are directed to twenty-three (23) separate and distinct inventions under 35 U.S.C. §121.

#### The Group Election

In response to the group restriction requirement, Applicants elect with traverse Group III, claims 33 to 37, 114 and 115, drawn to a method of producing a polypeptide polymer.

#### The Sequence Restriction Requirement

The Patent Office further alleged that each restriction group reads on a plurality of independent and/or patentably distinct sequences, SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, or SEQ ID NO:9, for polynucleotides, and SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, or SEQ ID NO:10 for polypeptides.

#### The Sequence Election

In response to the sequence restriction requirement, Applicants elect with traverse SEQ ID NO:1, encoding SEQ ID NO:2.

#### Reasons to reconsider and withdraw the group and sequence restriction requirement

Applicants respectfully request the Patent Office reconsider and, in part, withdraw the restriction requirement for the following reasons:

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Applicants respectfully request the Patent Office reconsider and join the elected Group III with Group V, claims 41 and 42, drawn to methods of encapsulating molecules using self-assembling polypeptides into one restriction group.

Applicants respectfully aver that after a complete search directed to method of producing a polypeptide polymer, it would not be an undue burden for the Patent Office to also do a complete search for corresponding methods of encapsulating molecules using self-assembling polypeptides. Accordingly, Applicants respectfully request the Patent Office to rejoin all claims directed to methods of producing a polypeptide polymer and methods of encapsulating molecules using self-assembling polypeptides into one restriction group.

Applicants respectfully request the Patent Office reconsider and examine all the nucleic acid sequences (SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, and SEQ ID NO:9) in one restriction group.

The Patent Office alleged that the sequences are unrelated compounds with no disclosed core structure for a common utility. However, SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, and SEQ ID NO:9 share high percent sequence identity, please see the CLUSTALW alignment attached as Appendix A. Also, please note the alignments in the specification on pages 16 to 18. All of these sequences encode "cannulae" genes, which were derived from the same organism, *Pyrodictum abyssi*. Therefore, SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, and SEQ ID NO:9 share common a utility and function and are structurally related. Accordingly, Applicants respectfully request the Patent Office to rejoin SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, and SEQ ID NO:9 into one restriction group.

#### CONCLUSION

It is believed that the all claims pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If an additional fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 06-1050. Please credit any overpayment to the above-noted Deposit Account.

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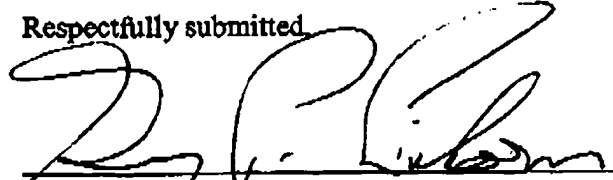
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If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858 678 5070.

Respectfully submitted

Date:

*Oct 30, 2003*



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